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### CLAIMS

1 - Dosing pump for a liquid additive in the fuel of a heavy fuel engine, said pump comprising a piston (3), a cylinder (1) and an actuator (7) for moving the piston (3) axially in the cylinder (1), characterized in that the actuator (7) is a  
5 high resolution linear actuator.

2 - Dosing pump according to the preceding claim, characterized in that the pump comprises a manifold (6) having at least one inlet (2) and one outlet (2') check valve which are passive, one-way valves.

3 - Dosing pump according to any of the preceding claims, characterized in  
10 that it is a syringe pump of which the piston (3) contacts a solid surface at the end of each dose cycle.

4 - Dosing pump according to any of the preceding claims, characterized in that the linear actuator (7) is driven by a rotary electric motor through a gear reduction.

15 5 - Dosing pump according to any of the preceding claims, characterized in that it has a capacity equal to the maximum dose required so that the required additive volume is always dispensed through only one cycle of the pump.

6 - Dosing pump according to any of claims 1 to 4, characterized in that it has a capacity lower than the maximum dose so that the required additive  
20 volume is dispensed through one or more pump cycles.

7 - Dosing pump according to any of the preceding claims, characterized in that it comprises a seal (4) to ensure tightness between the piston (3) and the cylinder (1).

8 - Dosing pump according to the preceding claim, characterized in that the  
25 seal (4) is either a sliding seal, disposed radially on the piston (3) head and sliding with the piston (3) inside the cylinder (1), or a low friction dish seal having at least one portion (F) attached to the piston (3) and moving with it.

9 - Fuel system comprising a liquid fuel additive dosing pump according to any of the preceding claims.